



F R I E D R I C H

**SPLIT TYPE
ROOM AIR CONDITIONER
CEILING TYPE (60Hz)**

SERVICE MANUAL

**Indoor unit Outdoor unit
MS36Y3F MR36Y3F**

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SPECIFICATIONS

ELECTRICAL DATA

TYPE		COOLING & HEATING
INDOOR UNIT		MS36Y3F
OUTDOOR UNIT		MR36Y3F
COOLING CAPACITY		34,100 BTU/h / 33,500 BTU/h
HEATING CAPACITY		38,200 BTU/h / 37,600 BTU/h
POWER SOURCE		230 V / 208 V
FREQUENCY		1Ø 60Hz
RUNNING CURRENT	COOLING	18.3 A / 19.5 A
	HEATING	15.3 A / 16.9 A
INPUT WATTS	COOLING	4.22 kW / 4.08 kW
	HEATING	3.50 kW / 3.50 kW
E.E.R.	COOLING	2.37 kW/kW / 2.40 kW/kW
	HEATING	3.06 kW/kW / 3.06 kW/kW
MOISTURE REMOVAL		7.4 Pts/h (3.5 L/hr)
AIR CIRCULATION		1,088 cfm (1,850 m³/hr)

FAN MOTOR

POWER SOURCE		230 V
INDOOR UNIT	Discrimination	MFA-45DZM
	High speed	Cool 1,100 r.p.m. / Heat 1,100 r.p.m.
	Middle speed	Cool 1,000 r.p.m. / Heat 900 r.p.m.
	Low speed	Cool 850 r.p.m. / Heat 750 r.p.m.
OUTDOOR UNIT	Discrimination	MFE-45ROM
	High speed	Cool 850 r.p.m. / Heat 900 r.p.m.

COMPRESSOR AND REFRIGERANT

TYPE		Hermetic type, 4 poles, Inverter, Twin rotary
DISCRIMINATION		TNB220FPBM9
REFRIGERANT		4 lb 14 oz (2,200g)
FULL CHARGE	Pipe length	49 ft. (15 m)
		4 lb 14 oz (2,200 g)
		5 lb 5 oz (2,400 g)
		6 lb 3 oz (2,800 g)
		7 lb 1 oz (3,200 g)
131 ft. (40 m)		7 lb 15 oz (3,600 g)
164 ft. (50 m)		0.43 oz / ft. (40 g / m)

DIMENSIONS

INDOOR UNIT	H x W x D	9-1/2" x 65-1/2" x 27-5/8" inch 240 x 1,660 x 700 mm
OUTDOOR UNIT	H x W x D	32-3/4" x 35-1/2" x 13" inch 830 x 900 x 330 mm

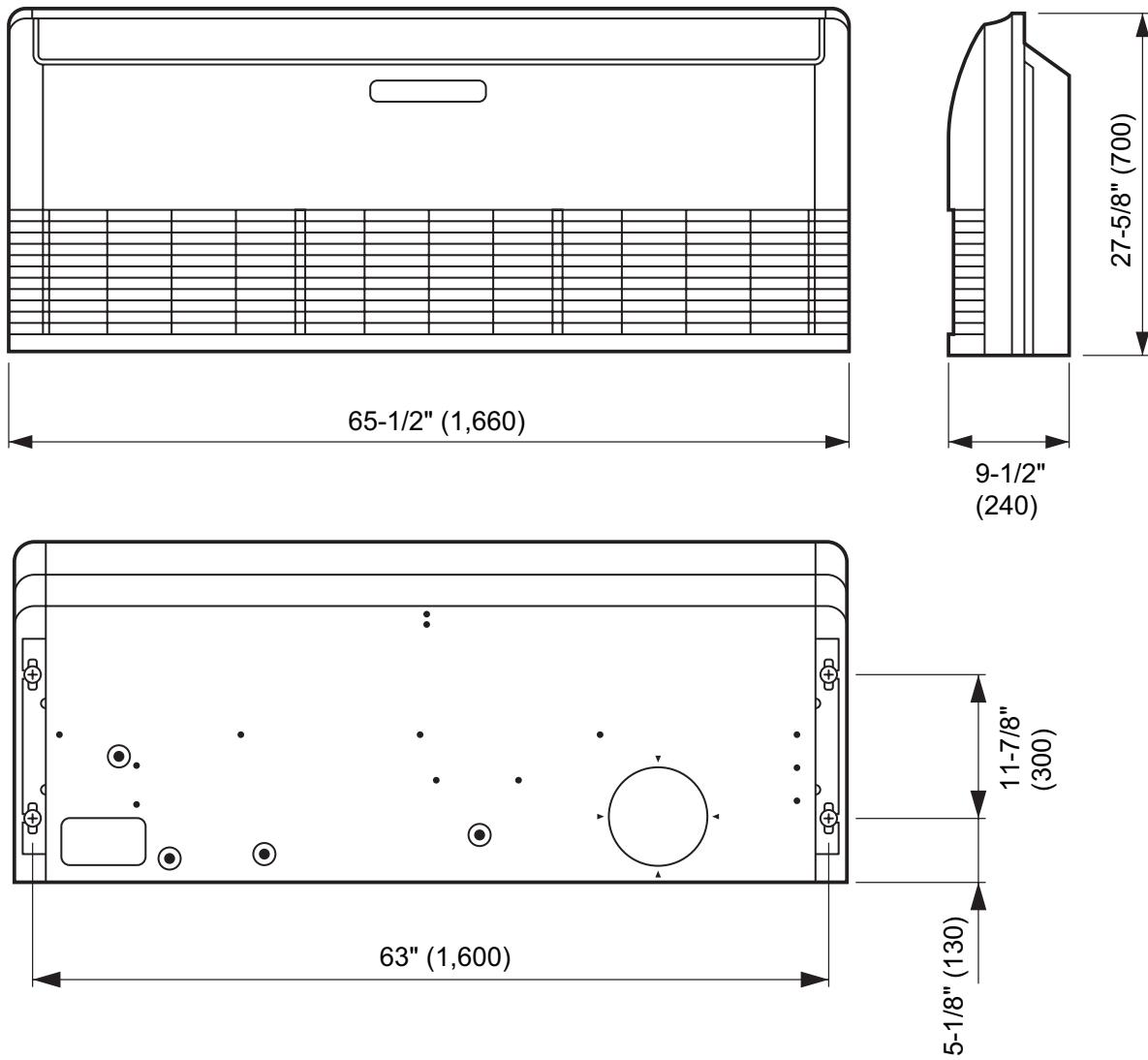
WEIGHT

INDOOR UNIT	Net / Gross	106 lb / 135 lb (48 kg / 61 kg)
OUTDOOR UNIT	Net / Gross	141 lb / 154 lb (64 kg / 70 kg)

OUTLINE AND DIMENSIONS

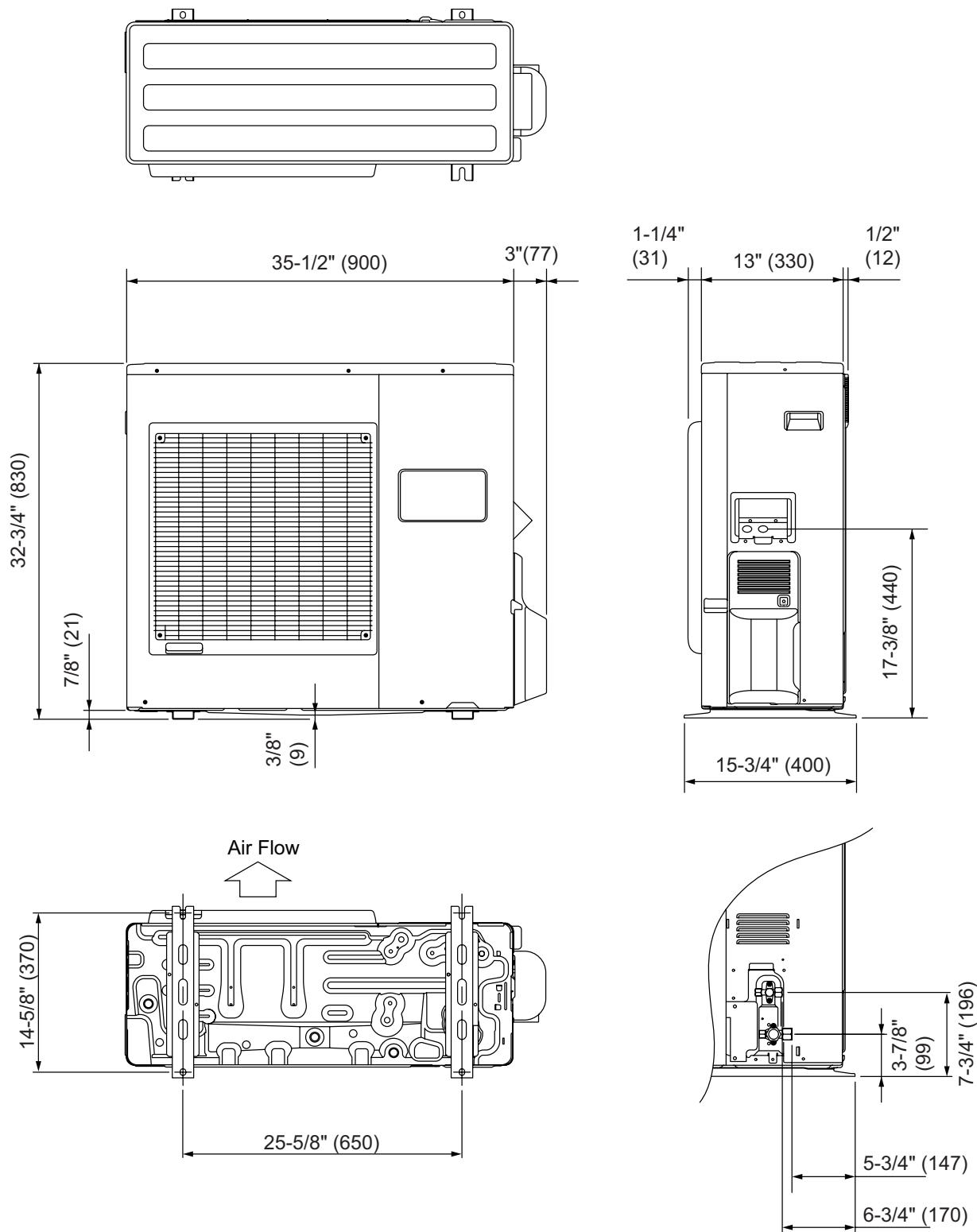
INDOOR UNIT

Unit : inch (mm)

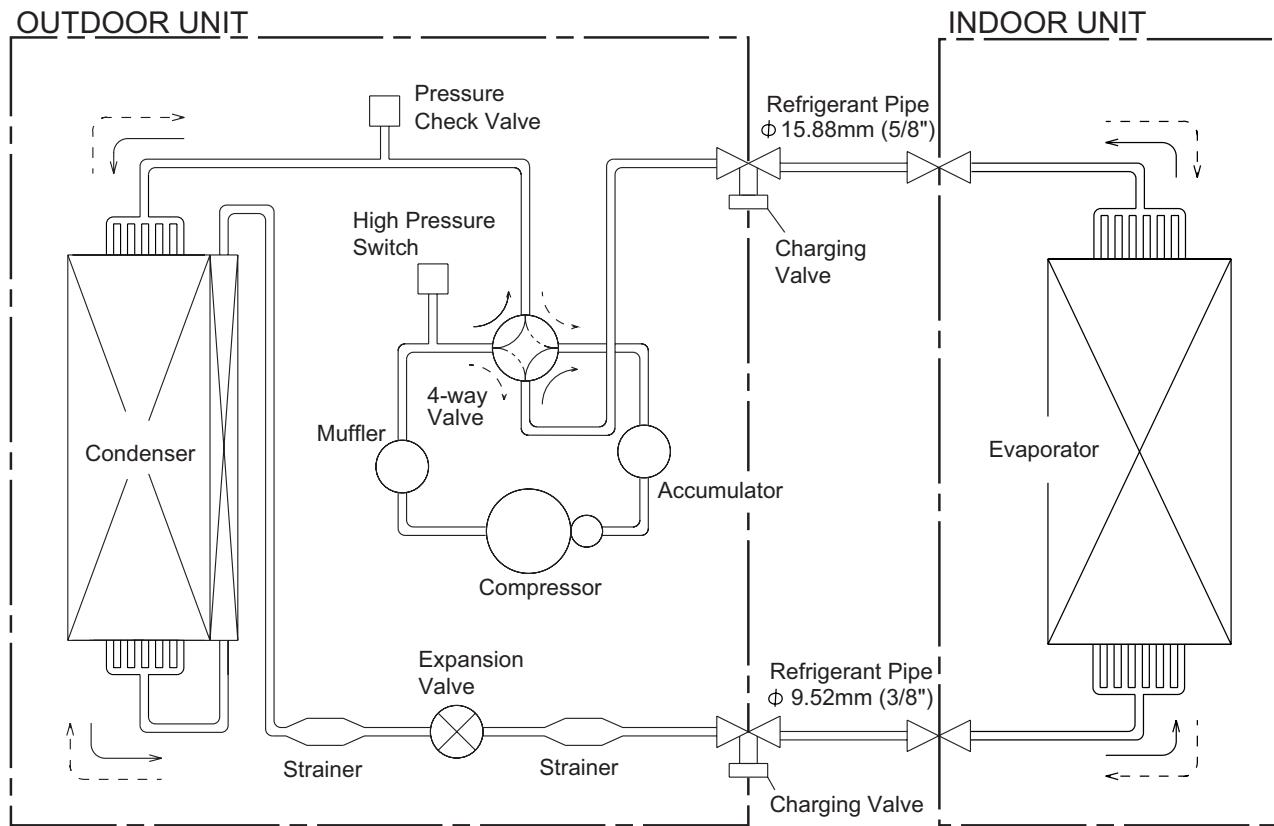


OUTDOOR UNIT

Unit : inch (mm)

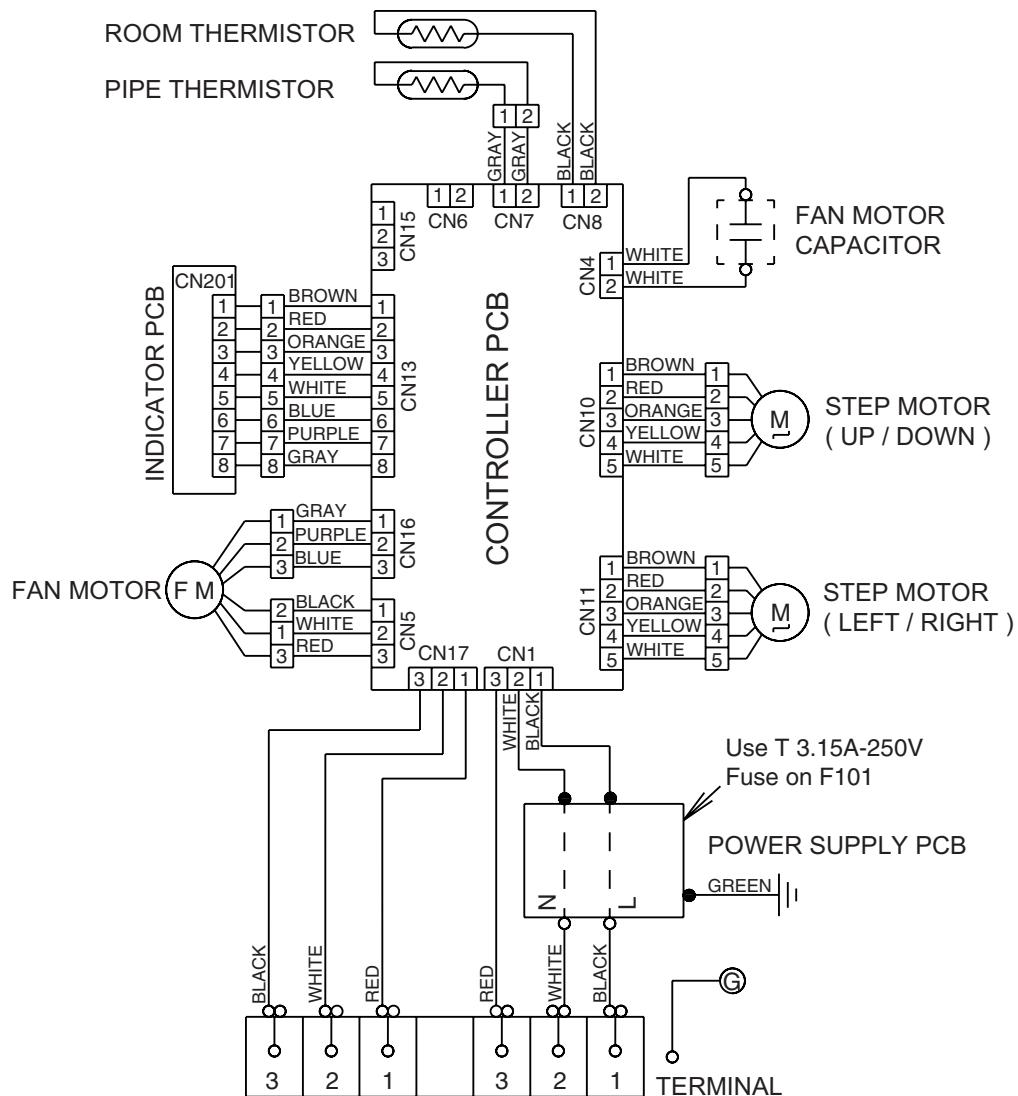


REFRIGERANT SYSTEM DIAGRAM

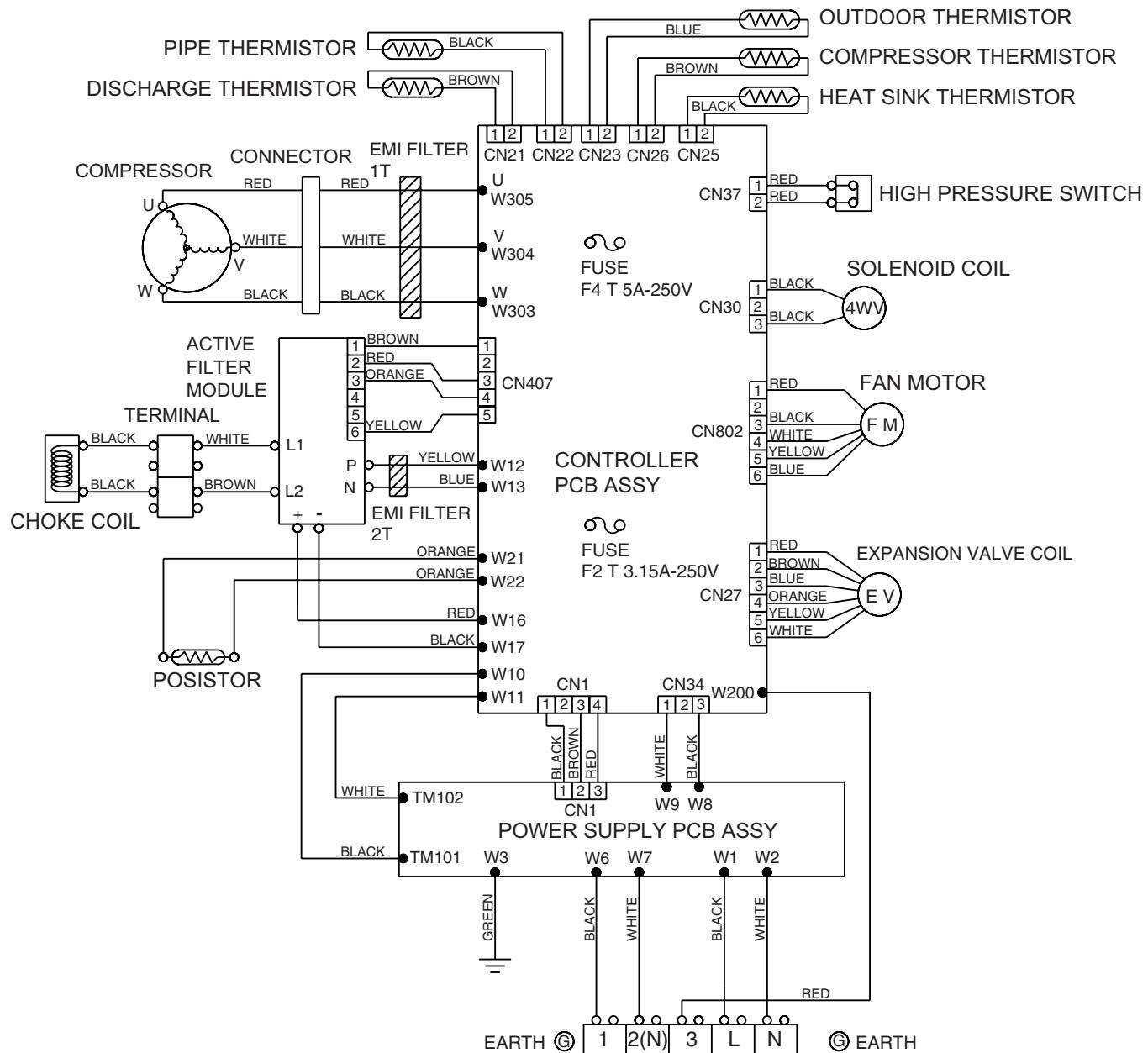


CIRCUIT DIAGRAM

INDOOR UNIT

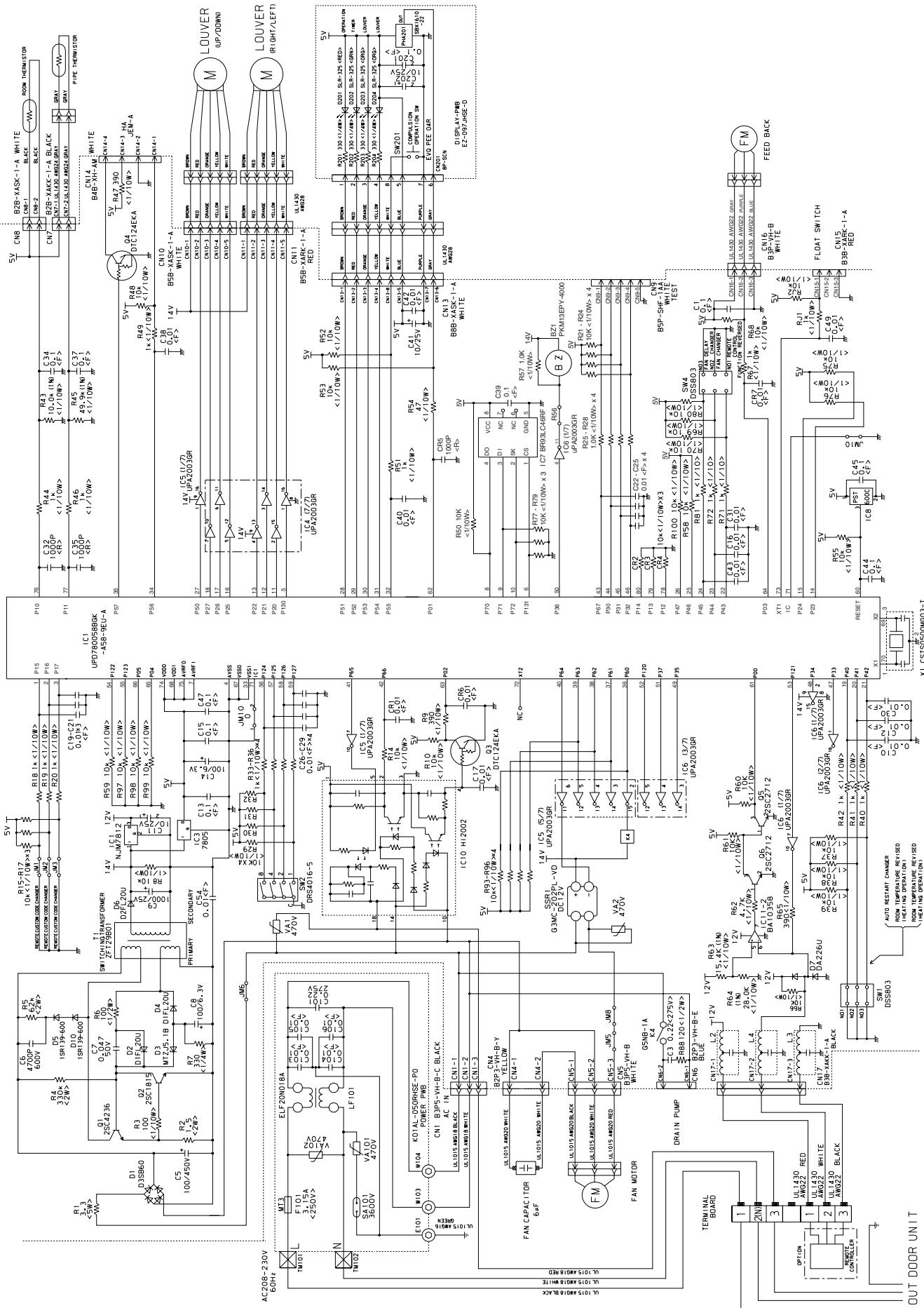


OUTDOOR UNIT



INDOOR PCB CIRCUIT DIAGRAM

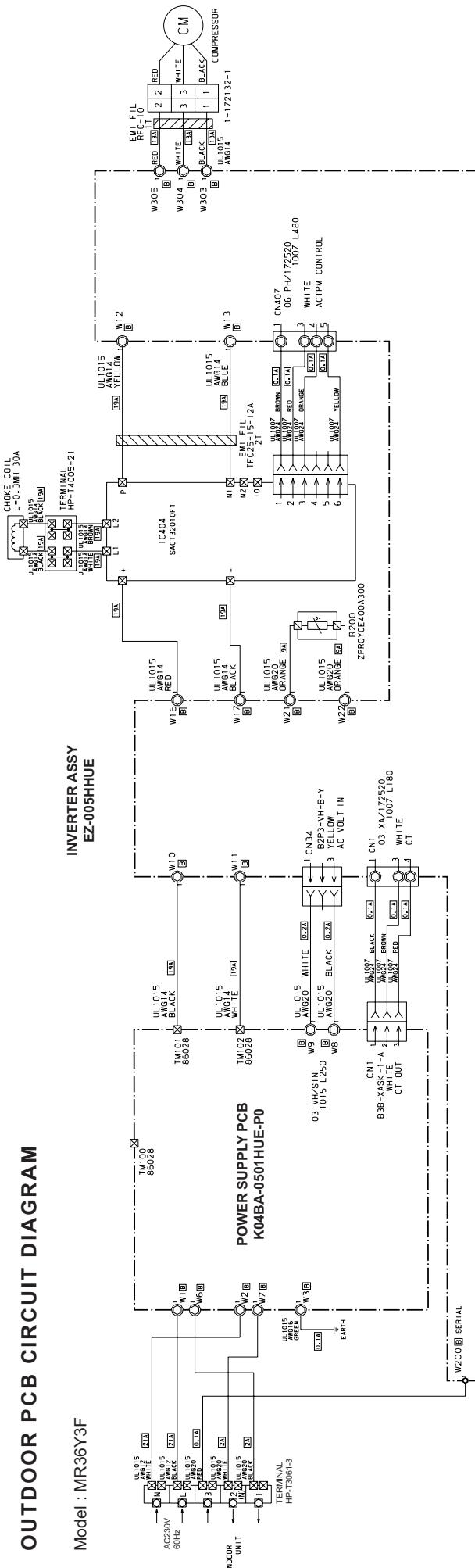
CONTROLLER PCB ASSEMBLY K01AL-050RHSE-C1



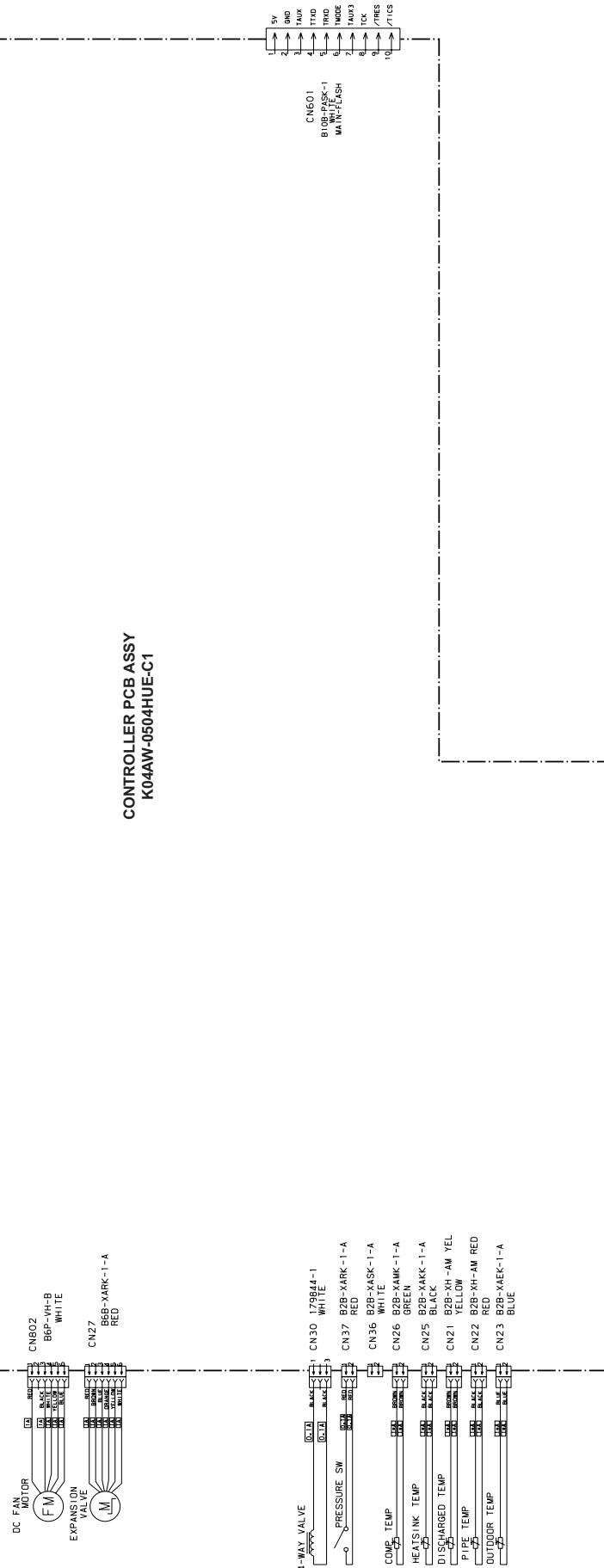
OUTDOOR PCB CIRCUIT DIAGRAM

Model : MR36Y3F

INVERTER ASSY
EZ-005HHUE



CONTROLLER PCB ASSY
K04AW-0500HIE-C1

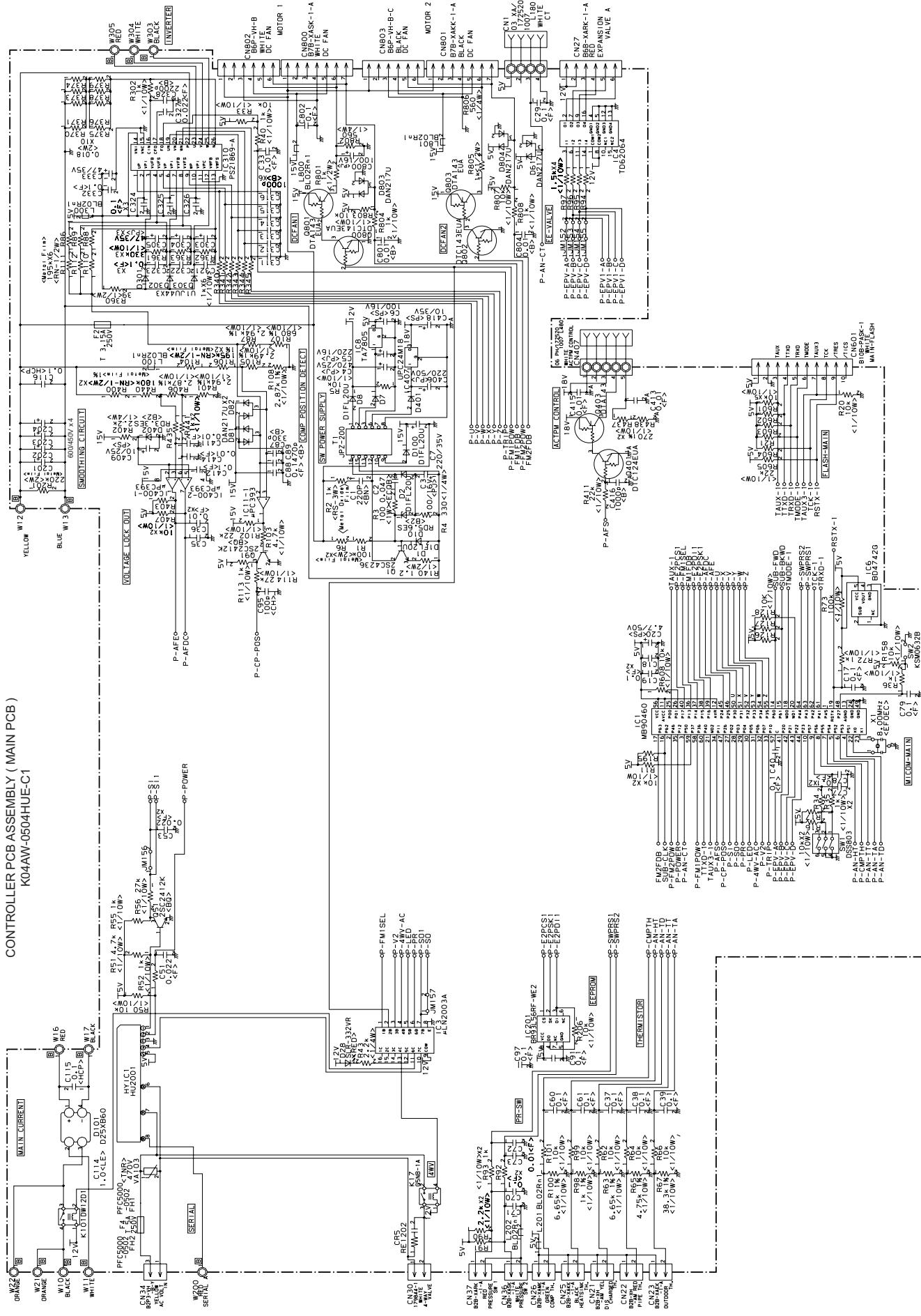


Model : MFR36Y3F

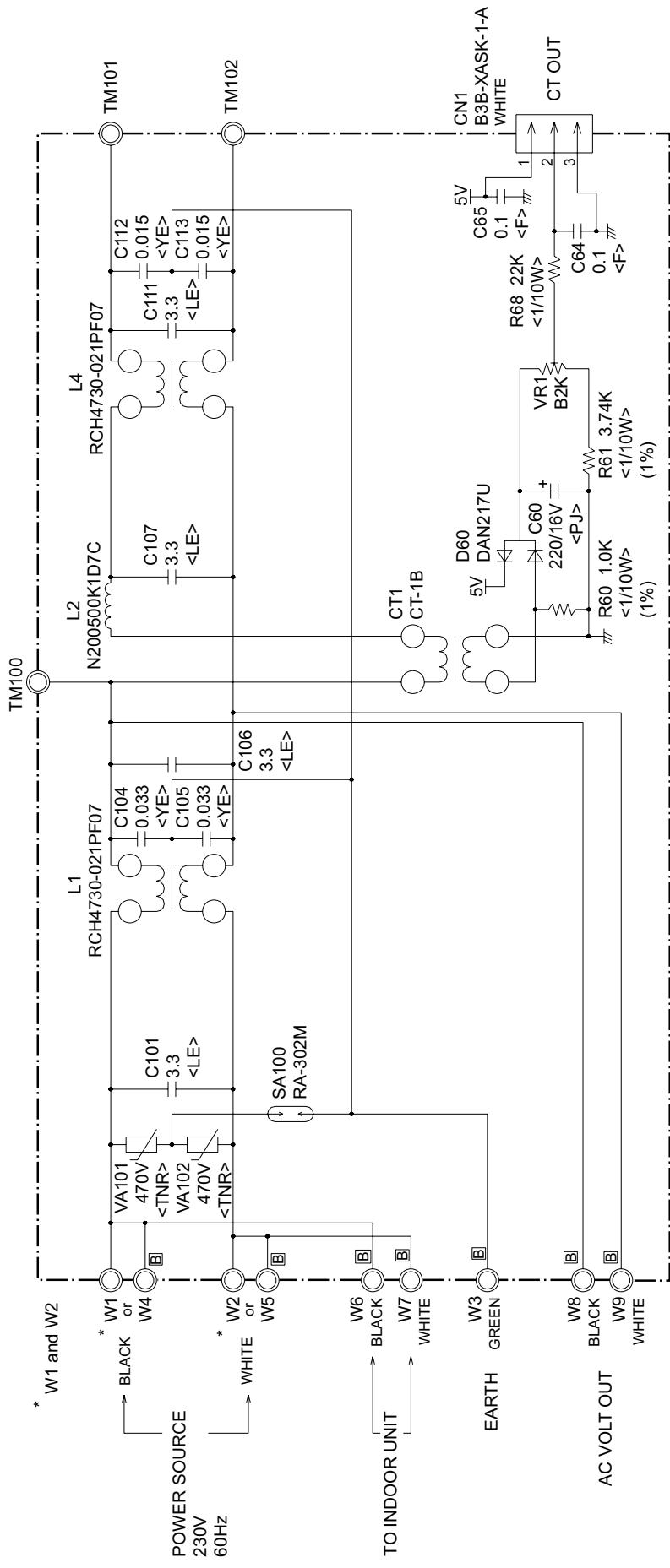
CONTROLLER PCB ASSEMBLY (MAIN PCB)

K04AW-0504HUE-C1

PCB ASSEMBLY (MAIN PCB)
4AW-0504HUE-C1



POWER SUPPLY PCB ASSEMBLY
K04BA-0501HUE-P0

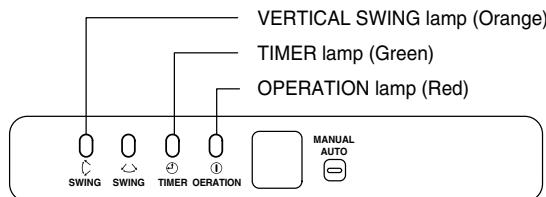


ERROR CONTENTS

(Indoor unit)

Operation can be checked by lighting and flashing of the display section OPERATION, TIMER, and VERTICAL SWING lamps.

Perform judgment in accordance with the following.



TEST RUNNING

When the air conditioner is run by pressing the remote control unit test run button, the OPERATION, TIMER, and VERTICAL SWING lamps flash slowly at the same time.

ERROR

The OPERATION, TIMER, and VERTICAL SWING lamps operate as follows according to the error contents.

OPERATION lamp (RED)	TIMER lamp (GREEN)	SWING lamp (ORANGE)	Error contents
○	○	×	Indoor EEPROM abnormal
○	○	○	Outdoor EEPROM abnormal
(2 times) ●	○	×	Indoor room temperature sensor open
(2 times) ●	○	○	Indoor room temperature sensor shortcircuited
(3 times) ●	○	×	Indoor heat exchanger temperature sensor open
(3 times) ●	○	○	Indoor heat exchanger temperature sensor shortcircuited
(4 times) ●	○	×	Float switch operated
(5 times) ●	○	×	Indoor signal abnormal
(5 times) ●	○	○	Outdoor signal abnormal
(6 times) ●	○	×	Indoor fan abnormal
○	(2 times) ●	×	Outdoor power source connection abnormal
○	(3 times) ●	×	Outdoor heat exchanger temperature sensor open
○	(3 times) ●	○	Outdoor heat exchanger temperature sensor shortcircuited
○	(4 times) ●	×	Outdoor temperature sensor open
○	(4 times) ●	○	Outdoor temperature sensor shortcircuited
○	(5 times) ●	×	Outdoor discharge pipe temperature sensor or compressor temperature sensor open
○	(5 times) ●	○	Outdoor discharge pipe temperature sensor or compressor temperature sensor shortcircuited
○	(6 times) ●	×	Outdoor high pressure abnormal
○	(7 times) ●	×	Outdoor discharge pipe temperature or compressor temperature sensor abnormal

○ : 0.1s ON/0.1s OFF (flash) × : OFF

● : 0.5s ON/0.5s OFF (flash)

ERROR CONTENTS

(outdoor unit)

1. Make a TEST RUN in accordance with the installation instruction sheet for the indoor unit.

2. OUTDOOR UNIT LEDS

When a malfunction occurs in the outdoor unit, the LED on the circuit board lights to indicate the error. Refer to the following table for the description of each error according to the LED.

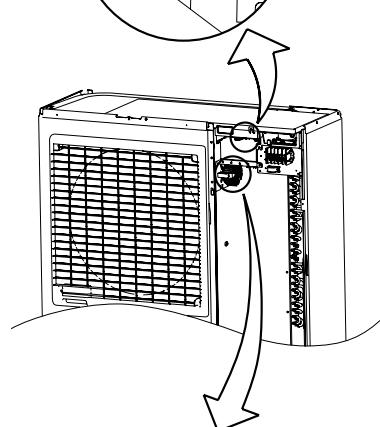
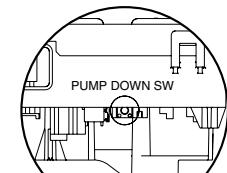
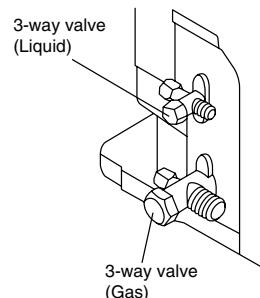
LED	Error contents
1 flash	Communication error (Indoor unit - Outdoor unit)
2 flash	Discharge pipe temperature sensor
3 flash	Outdoor heat exchanger temperature sensor
4 flash	Outdoor temperature sensor
7 flash	Compressor temperature sensor
8 flash	Heat sink temperature sensor
9 flash	Pressure switch abnormal
12 flash	IPM error
13 flash	Compressor rotor position cannot detect
14 flash	Compressor cannot operate
15 flash	Outdoor fan abnormal (upper fan)
16 flash	Outdoor fan abnormal (lower fan)
lighting	No error

2. When the product is operating:

①	Press the PUMP DOWN switch on the outdoor unit. The LED on the outdoor unit circuit board lights, and operation stops. At this point, recovery has not been completed, so do not close the two- and three-way valves.
②	The pump down operation (cooling operation) begins after three minutes. Close the three-way valve (liquid) after operation starts.
③	After 2 - 3 minutes, operation stops. Close the three-way valve (gas) within one minute after operations stops.
④	The LED will go out three minutes after it stops. Disconnect the power supply after confirming that the LED has gone out.

*When the pump down operation is repeated, temporarily disconnect the power supply after opening the closed valves (both liquid and gas). Reconnect the power supply after 2 - 3 minutes and perform the pump down operation.

*When the start of the operation after pump down operation has been completed, temporarily disconnect the power supply after opening the closed valves (both liquid and gas). Reconnect the power supply after 2-3 minutes and be sure to perform a test operation for cooling.



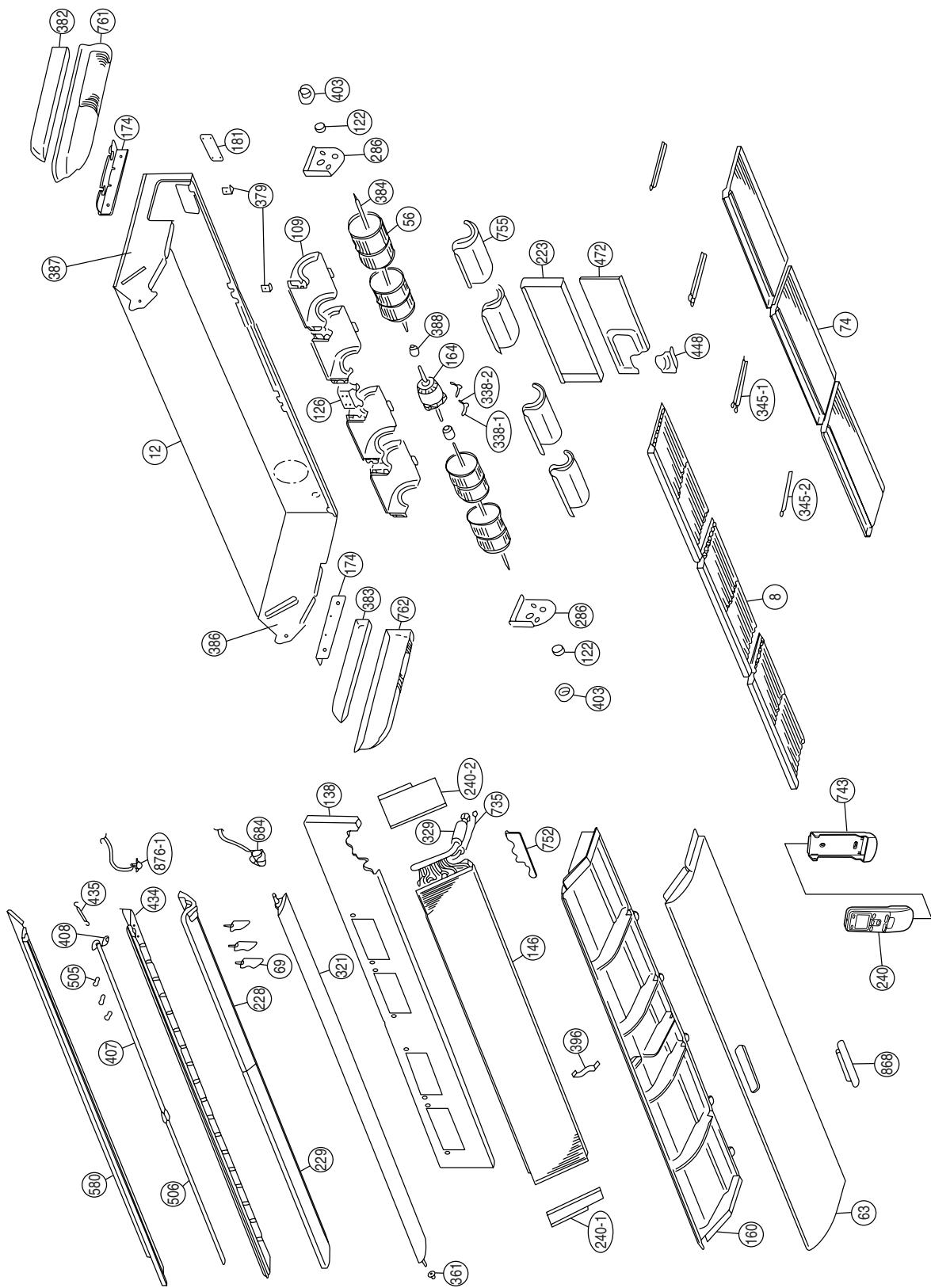
DANGER

This part (Choke coil) generates high voltages. Never touch this part.

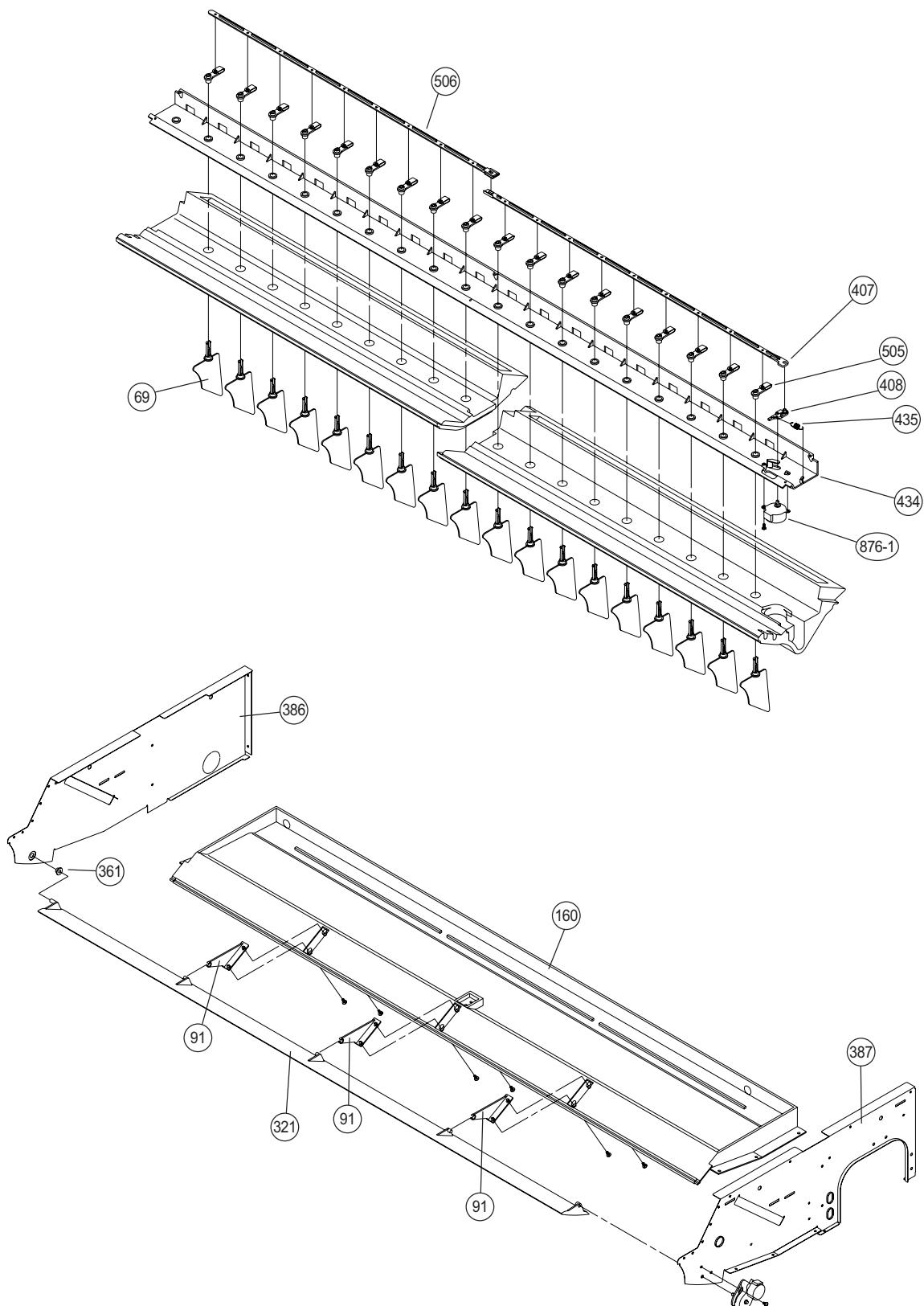
DISASSEMBLY ILLUSTRATION

INDOOR UNIT

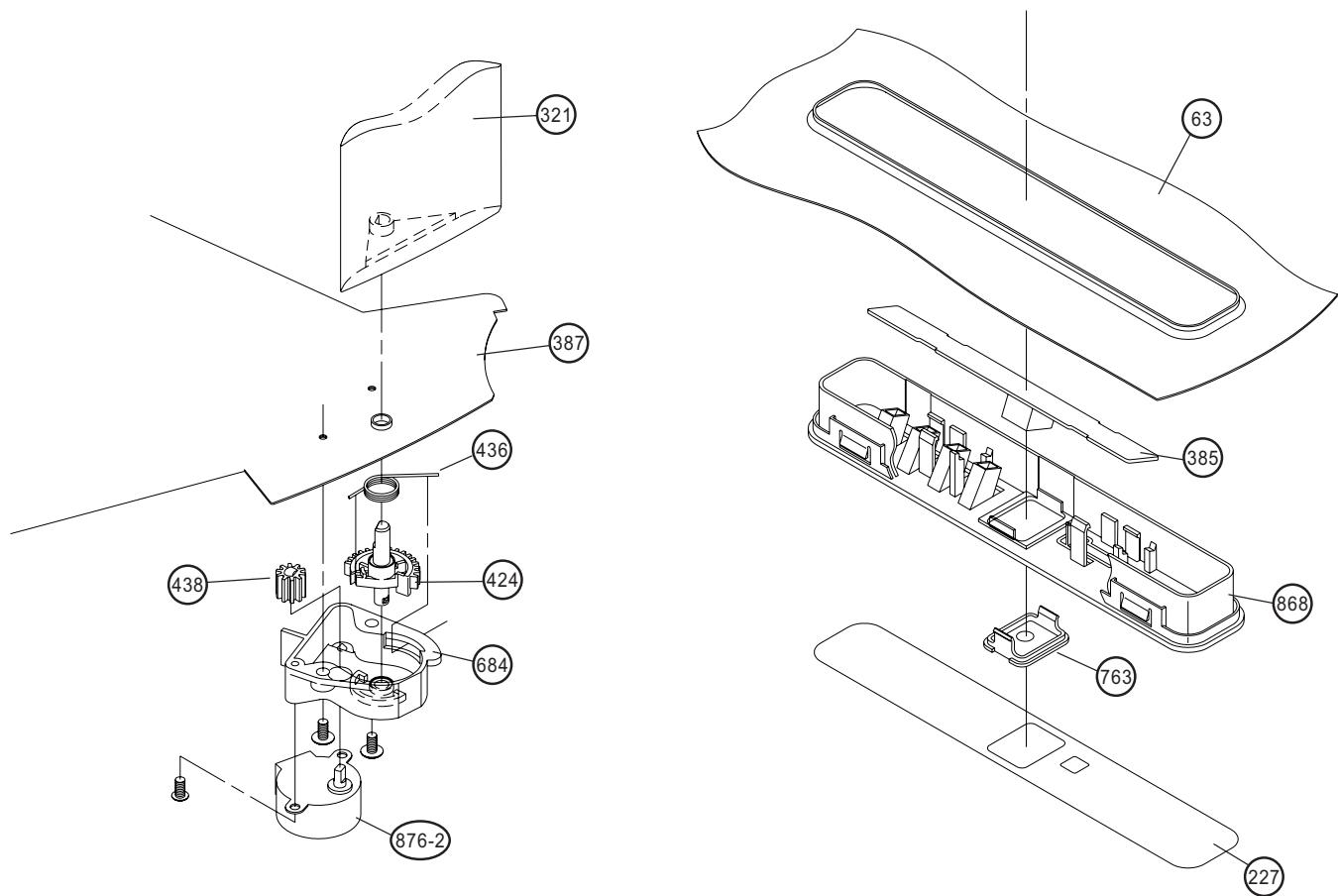
Model : MS36Y3F



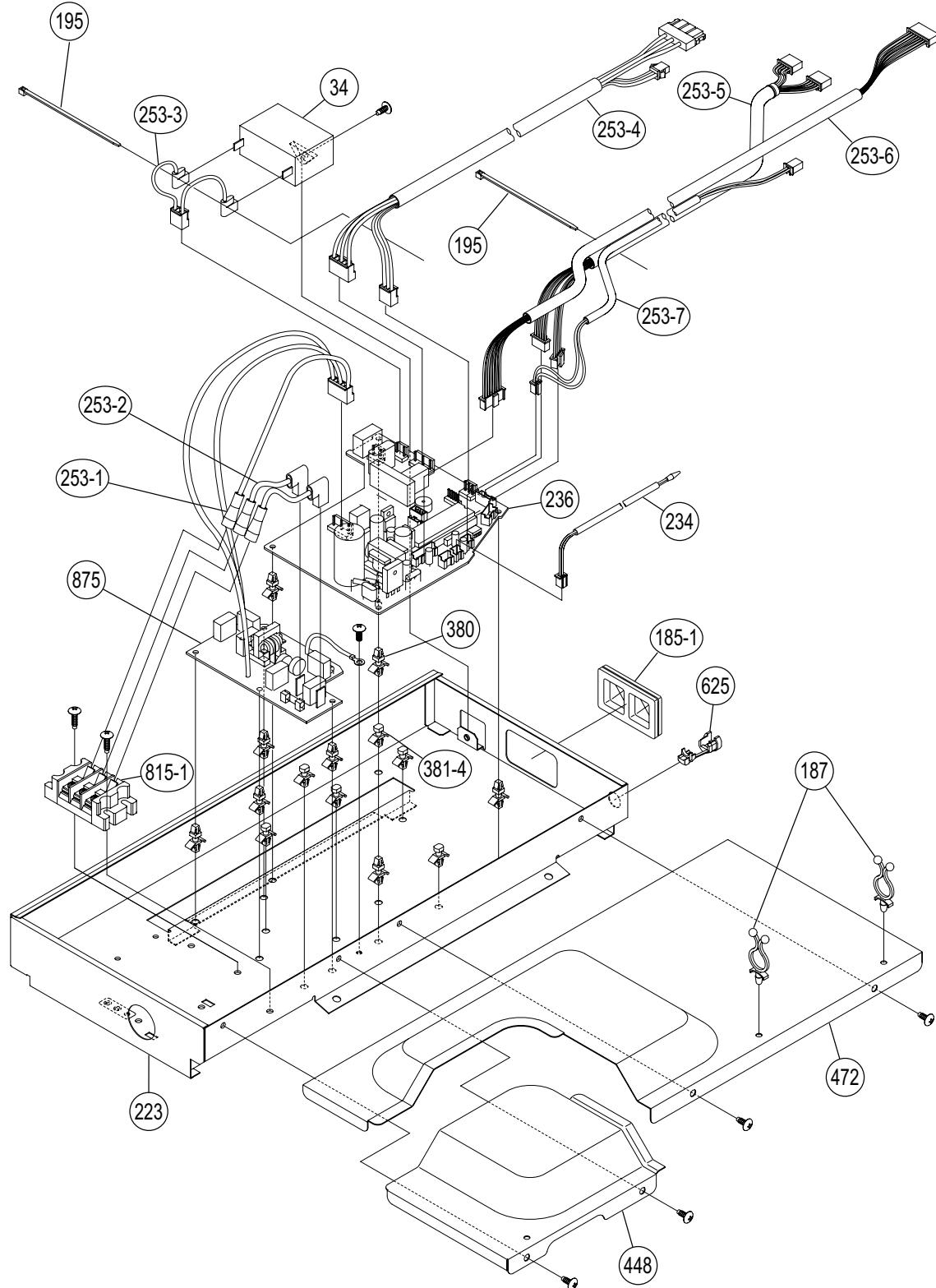
Model : MS36Y3F



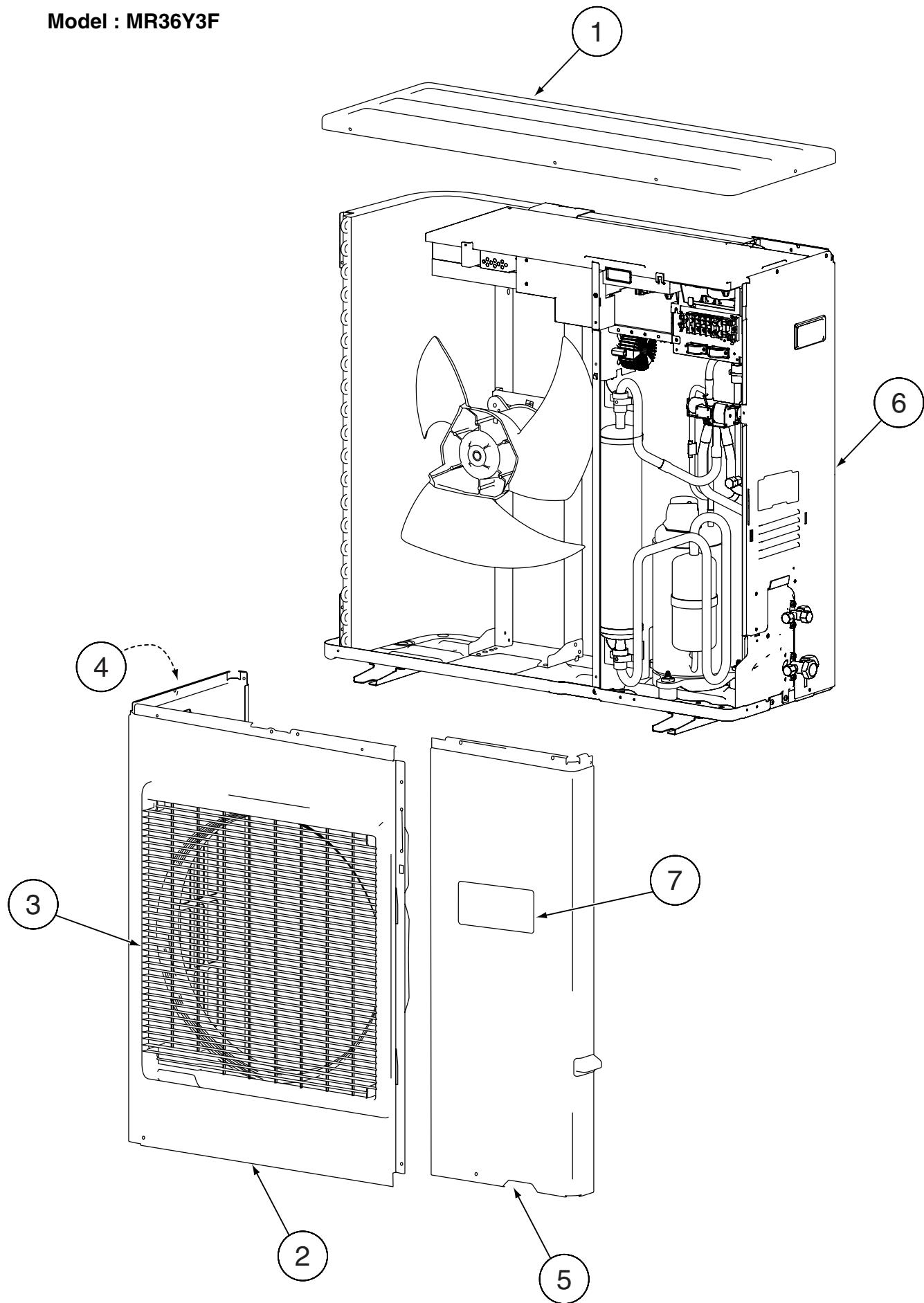
Model : MS36Y3F



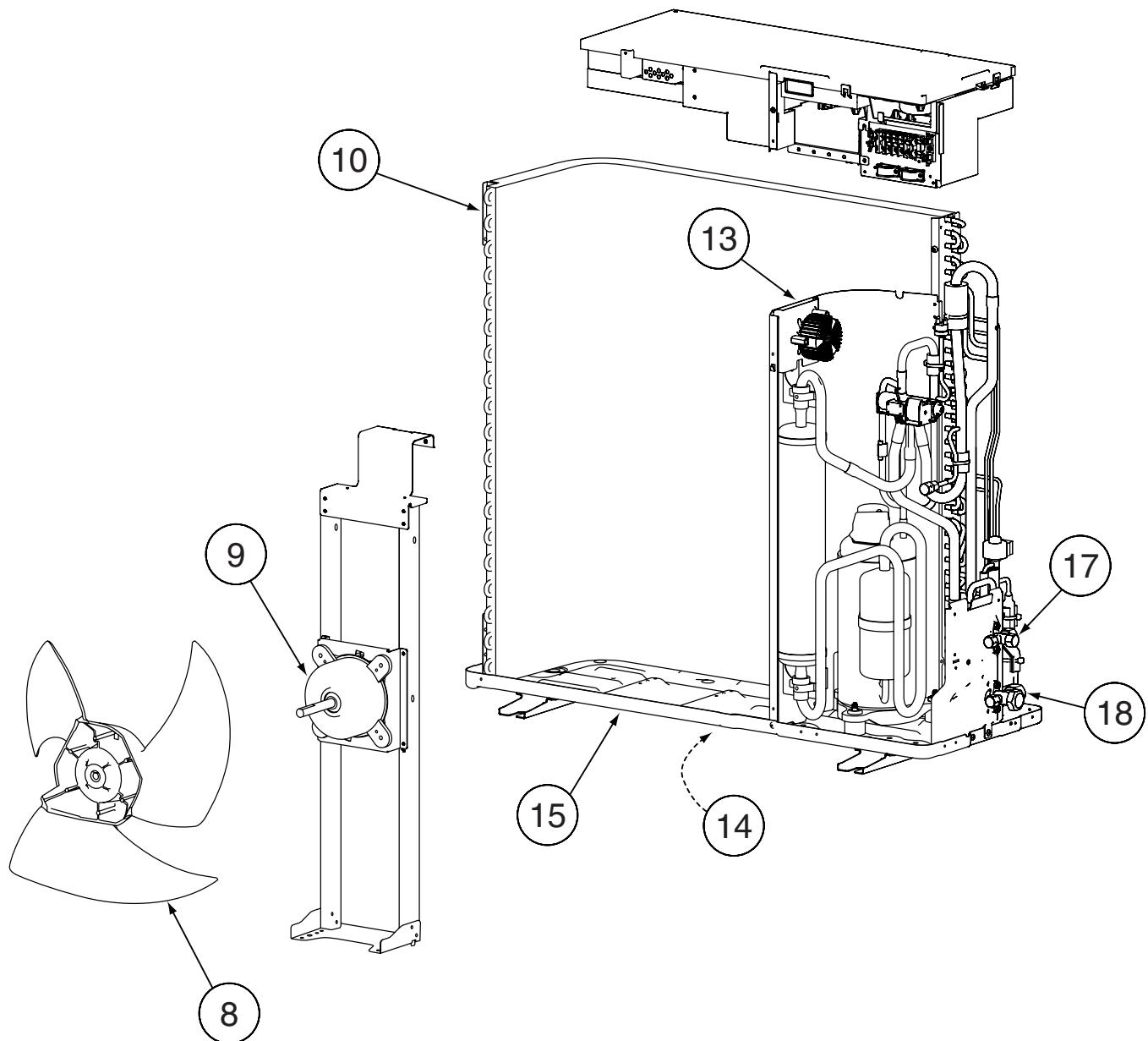
Model : MS36Y3F



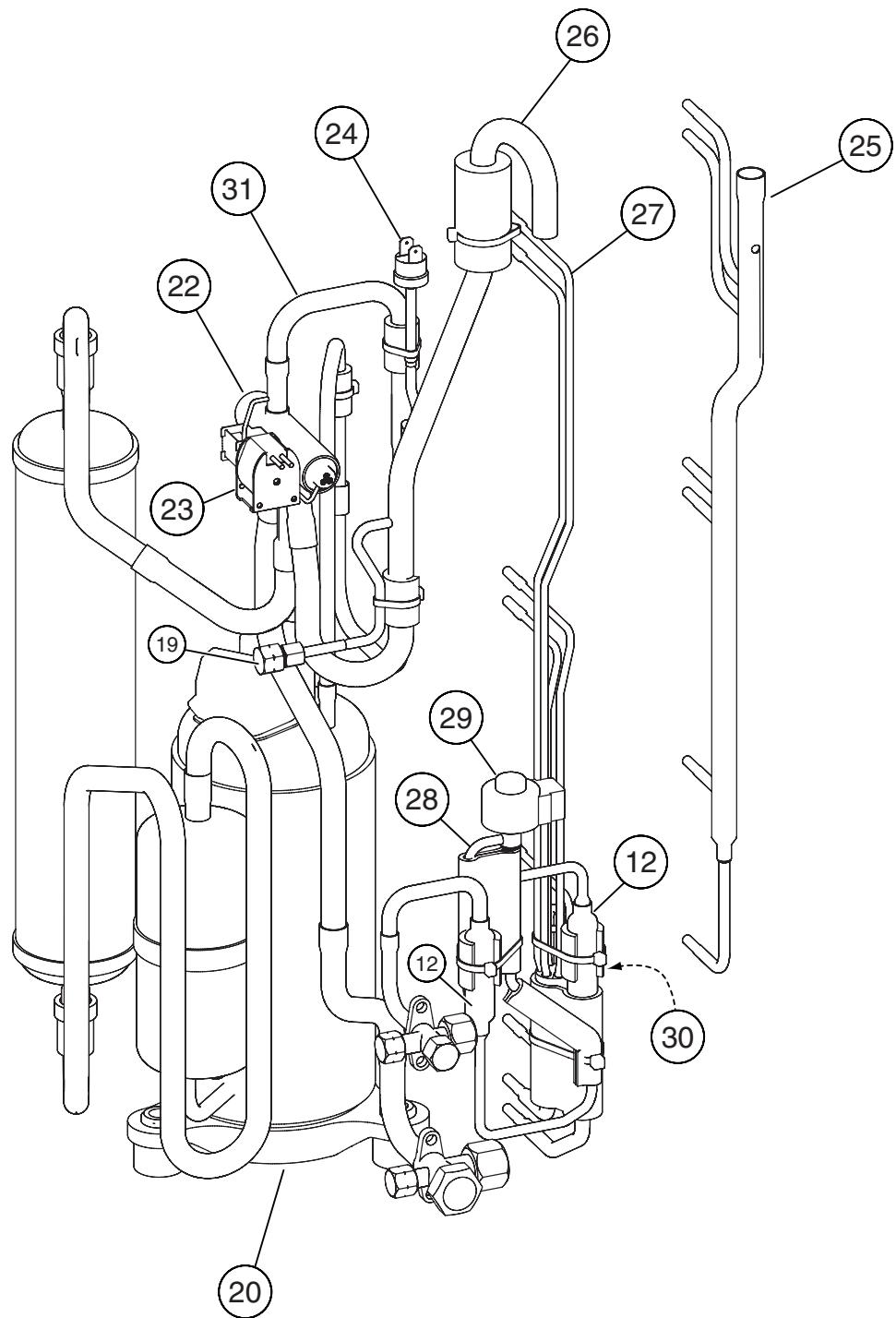
Model : MR36Y3F



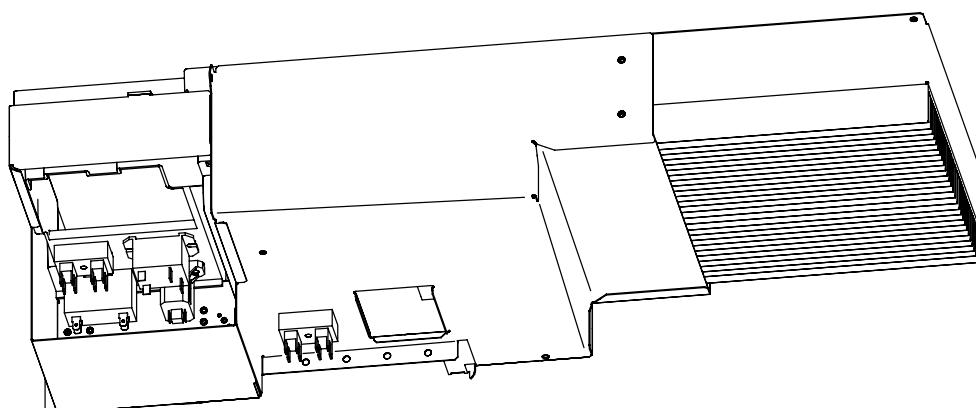
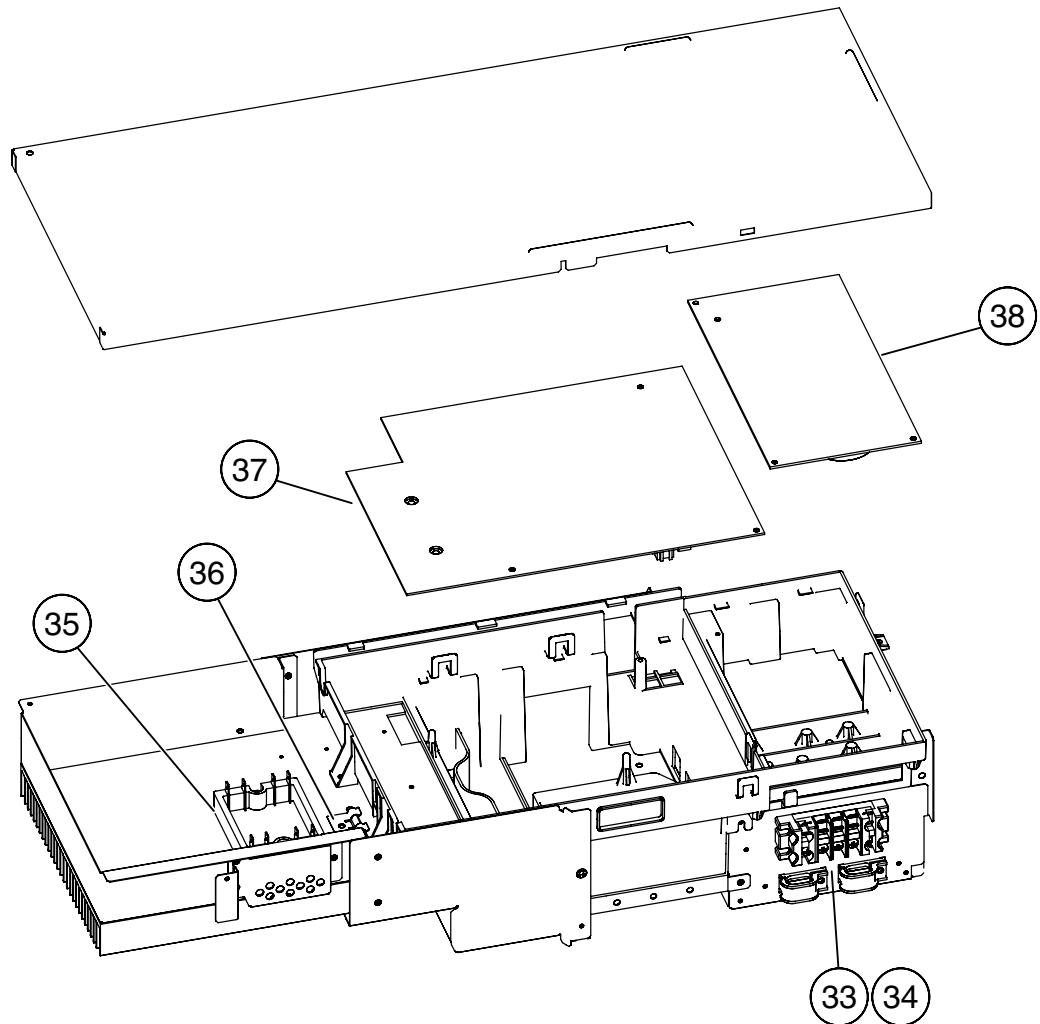
Model : MR36Y3F



Model : MR36Y3F



Model : MR36Y3F



PARTS LIST

INDOOR UNIT

Ref.	Description	Part No.	Ref.	Description	Part No.
8	Air Filter	9359739005	345-1	Filter Guide-R	9359692003
12	Base Assy	9359680000	345-2	Filter Guide-L	9359693000
34	Capacitor	9900270216	361	Bushing	9359733003
56	Sirocco Fan Assy	9359701002	379	Hinge Plate (Grille)	9359694007
63	Panel (Front)	9359734000	380	Locking Spacer KGLS-6S	313209391403
69	Louver	9359719007	381-4	Spacer	0600118075
74	Intake Grille	9359738008	382	Cover (Decoration)-R	9359744009
91	Hinge	9359699002	383	Cover (Decoration)-L	9359745006
109	Casing	9359704003	384	Shaft	9359707004
122	Bearing-B Assy	9357921006	385	Indicator PCB Assy	9702260019
126	Bracket (Motor)	9359681007	386	Panel Left Assy	9359685005
138	Separate Wall	9359700005	387	Kit (Panel Right Assy)	9371361017
146	Evaporator Assy	9371073040	388	Joint Assy	9359706007
160	Drain Pan Sub Assy	9360429018	396	Rfm Bracket Metal	9359697008
164	Fan Motor Assy-IN	9360457004	403	Fixture (Bearing)	9359687009
174	Hanger	9359742005	407	Rod (Motor)	9359723004
181	Hole Cover	9359691006	408	Link (Louver)	9359726005
185-1	Rubber Bushing	9357376004	424	Sector Gear	9359729006
187	Clamp No.1219	313361271706	434	Base (Louver)	9359718000
195	Clamp SKB-100	313361275805	435	Louver Spring	9359720003
223	Control Box Assy	9362025003	436	Flap Spring	9359730002
227	Badge "FRIEDRICH"	9359735076	438	Pinion Gear	9359728009
228	Insulation (Louver)-R	9359721000	448	Control Box-B	9359713005
229	Insulation (Louver)-L	9359722007	472	Control Box-A	9359712008
234	Thermistor (Room)	9703299025	505	Stopper (Louver)	9359724001
236	Controller PCB Assy	9705914285	506	Rod (Louver)	9359725008
		(K01AL-050RHSE-C1)	580	Cover (Top)	9359737001
240	Remote Control Unit	9371190051	625	Cord Bushing	9359240006
240-1	Cover Panel (Pipe)-L	9359690009	684	Motor Base	9359727002
240-2	Cover Panel (Pipe)-R	9359689003	735	Distributor Assy	9360455000
253-1	Wire Assy (Terminal)	9702321017	743	Remote Control Holder Case	9305642014
253-2	Wire Assy (Terminal)	9702322014	752	Bracket Panel (Pipe)	9359688006
253-3	Wire Assembly	9702311018	755	Cover (Casing)	9359705000
253-4	Wire Assy (Connector)	9702323011	761	Kit (Cover Side-R)	9371364018
253-5	Wire Assy (Connector)	9702319014	762	Kit (Cover Side-L)	9371365015
253-6	Wire Assy (Connector)	9702317010	763	Cover (Receiver)	9359714002
253-7	Wire Assy (Connector)	9702318017	815-1	Terminal-7P	9703403019
286	Bracket (Bearing)	9359686002	868	PCB Holder	9359736004
321	Flap Assy	9359731009	875	Power Supply PCB Assy	9704561350
329	Coupling Pipe Assy	9373038214	876-1	Motor, Step-H	9360479013
338-1	Fixture (Motor)	9359702009	876-2	Motor, Step	9900362010
338-2	Fixture (Motor)-B	9359703006	---	Thermistor (Pipe)	9900022020

OUTDOOR UNIT

Ref.	Description	Part No.	
1	Top Panel Sub Assy	9374417025	
2	Front Panel	9374094066	
3	Fan Guard	9374330010	
4	Grip Side	9374173013	
5	Service Panel Sub Assy	9374415038	
6	Right Panel Sub Assy	9374416073	
7	LABEL (FRIEDRICH)	9375212025	
8	Propeller Fan Assy	9366378020	
9	Motor, Induction	9602114016	
10	Condenser-A Assy	9374433148	
12	Strainer Assy	9372524015	
13	Separate Wall Assy	9375226015	
14	Cap Foot	9374345014	
15	Base Assy	9374166183	
17	3-Way Valve Assy	9372205044	
18	3-Way Valve Assy	9372205075	
19	Check Joint Assy	9372802038	
20	Compressor Assy	9373711018	
22	4-Way Valve	9900164010	
23	Solenoid	9900165055	
24	Pressure Switch	9900186012	
25	Inlet Pipe Cond A Assy	9373461067	
26	Inlet Pipe Cond B Assy	9373463054	
27	Outlet Pipe Cond A Assy	9374266050	
28	Expansion Valve Assy	9370947113	
29	Coil (Expansion Valve)	9900057039	
30	Distributor	9369128004	
31	Discharge Pipe A Assy	9372264140	
33	Terminal 2P	9701971015	
34	Terminal 5P	9900203023	
35	ACTPM	9703457012	
36	Holder Thermo	9372797013	
37	Inverter PCB Assy	9705642102	
38	Power PCB Assy	9705647053	
---	Fuse 3.15A-250V	0600239534	
---	Thermistor (Outdoor Temp.)	9900378035	
---	Heat Exchanger Thermistor	9900374013	
---	Thermistor (Discharge)	9704219114	
---	Compressor Thermistor	9900156022	
---	Thermistor	9704265012	
---	Heatsink Thermistor	9900311018	
---	Transformer	9702334024	
---	Varistor	0000361224	
---	Arrester	0600280147	
---	Relay	9900117016	
---	Relay	9900007010	
---	Switch Push	9703476013	
---	Switch Slide	9701392018	
---	Drain Pipe Assy	9303029015	
---	Drain Cap	313166024302	

ACCESSORIES

INDOOR UNIT

Name and Shape	Q'ty	Application
Remote control	1	Use for air conditioner operation
Battery (penlight)	2	For remote control unit
Remote control unit holder	1	For mounting the remote control unit
Tapping screw (ø3 x 12)	2	For remote control unit holder installation
Drain hose insulation	1	Adhesive type 70 x 230
VT wire	1	For fixing the drain hose L 280 mm

Name and Shape	Q'ty	Application
Coupler heat insulator (large)	2	For indoor side pipe joint (Gas pipe)
Coupler heat insulator (small)	1	For indoor side pipe joint (Liquid pipe)
Nylon fastener	Large 4	For fixing the coupler heat insulator
	Small 4	
Special nut A (large flange)	4	For installing indoor unit
Special nut B (small flange)	4	For installing indoor unit
Installation template	1	For positioning the indoor unit
Auxiliary pipe assembly	1	For connecting the piping

OUTDOOR UNIT

Name and Shape	Q'ty	Application
Drain pipe	1	For outdoor unit drain piping work (May not be supplied, depending on the model.)
Drain cap	5	

OPTIONAL PARTS

The following options are available.

DRAIN PUMP UNIT : UTR-DPB241 (P/N 9034087001)

WIRED REMOTE CONTROLLER UNIT : UTB-UUB(P/N 9075887004)

0602G3034